ABSTRACT OF THE DISCLOSURE

A telecommunications network performs an inter-frequency hard handover for a connection with a user equipment unit (UE) by switching either from a cell or a current active set of base stations on a first frequency to a virtual active set of base stations on another (new) frequency. The inter-frequency hard handover can be an inter-frequency handover within a same system, or an inter-system handover. The virtual active set of base stations is maintained at the user equipment unit (UE), and is updated in accordance with one of several updating implementations of the invention. In a first mode of the invention for implementing virtual active set updates, the network authorizes the user equipment unit (UE) to report to the network the occurrence of certain network-specified events which are acted upon by the network for communicating virtual active set update information to the user equipment unit (UE). In a second mode of the invention, the network authorizes the user equipment unit (UE) to perform an autonomous virtual active set update upon occurrence of certain network-specified events, with inter-frequency events being reported from the equipment unit (UE) to the network and the network issuing an inter-frequency handover command. Advantageously, events which trigger intra-frequency measurements can be reused for reporting inter-frequency measurements. In another of its aspects, the present invention provides the network with a quality estimate for a current active set as well as a quality estimate for the virtual active set. The quality estimate can be utilized in a context of a handover from one UTRAN frequency to another UTRAN frequency, or even in the context of an inter-system handover (e.g., a handover between a UTRAN system and a GSM system, for example). The quality estimate can be utilized to trigger a change or switch of frequencies/systems. Certain thresholds employed in the quality estimate-utilizing handovers provide hysteresis protection.